Central Coast Regional Water Quality Control Board

Dear Regional Board Members,

I am requesting Designated Party Status for the upcoming Regional Board meeting regarding the Cease and Desist Order issued to 50 homeowners in the community of Los Osos.

I am President/CEO of Pirana ABG Inc. and am patent holder for a wastewater treatment device called an Aerobic Bacterial Generator (USPTO #6,781,318). This device, under the tradename Pirana SludgeHammer, is certified and listed with the Uniform Plumbing Code under IAPMO Standard IGC 180-2003 for use in remediating clogged leachfields serving residential septic tanks and commercial grease traps.

I hold a Ph.D. in Ecology from UC Berkeley and was a Research Ecologist with the University of California from 1973-1991. I have been involved in bacterial bioremediation for the last 15 years and have a patent also on a bacterial blend for use in both contaminated soil bioremediation and treatment of domestic and municipal wastewater.

The regional board granted permission to our company, working in association with the Los Osos CSD to install our device in systems in Los Osos for the purpose of investigating the systems efficacy in remediation of systems in Los Osos. We have not yet implemented these projects due to the complexity of the negotiations in Los Osos over the proposed sewering of the community, but we are back in negotiations with the CSD as a consequence of the communities desire to investigate methods other than a centralized sewer for resolving their issue with alleged septic pollution to groundwater in the area.

An unexpected aspect of the ABG biotechnology has been studied by our company in a number of installations in the US. I will submit as part of the written record documentation for these results. Namely, systems installed with ABGs that grow a dense colony of faculatative soil bacteria, particularly in the genus Bacillus, initiate an active form of denitrification in the soil at the aerobic interface of the leach system. Our results have shown reductions in total inorganic nitrogen directly under leach systems to levels ranging from <1.0 to 3.0 mg/l in several instances. Further I hold a pending patent on a methodology to achieve the same denitrification in retrofitted existing septic tanks.

Again, these documents will be submitted as part of my supporting documentation.

One other aspect of installations with the ABG technology is a substantial digestion of biosolids within the system. Data obtained over a 5 year period of

field installations demonstrates that effluent being discharged from retrofitted septic tanks has a TSS of less than 20 mg/l when averaged over that time period.

Both of these observations, 1) reductions in soil nitrate and inorganic nitrogen and 2) reduction in biosolids in septic systems are pertinent to your recent CDO. Your CDO will mandate pumping of these septic tanks every two months as a means to remediate the existing problem. On the face of it this CDO is misdirected for a number of reasons. First, a functioning septic tank, being operated anaerobically in traditional fashion, does not send substantial biosolids into the leach trench. Typically TSS in septic effluent is less than 100 mg/l, ranging from about 60-80 mg/l in most tanks. The cause of the problems in soils surrounding septic effluent is caused by the soluble organic load because of the propensity of intestinal bacteria entrained in the released effluent to secrete copious quantities of muco-polysaccharide slime.

Pumping a septic tank on a short cycle will diminish the treatment capacity of such a tank because, even though inefficient, the only biological treatment in such systems is caused by slowly developed anaerobic bacterial colonies over time. Constant pumping eliminates the beneficial bacteria and disrupts the biology of the tank and in the end will increase the biological load to the leach field. This solution is certain to exacerbate the problem currently existing with these 50 homes.

The ABG principle rests on the basis of the concept of “bioremediation”. This practice is widely used with extremely toxic petroleum compounds throughout the world, and is currently being conducted in most California State Water Boards at this very time. Spore forming soil bacteria, typical of those generated by ABG technology, are fermenting bacteria and have been used as such for generations in other important industries. Such bacteria have an active appetite for the same sugar compounds present in the leach field clogging biomats. The remediala activity in such systems opens soil pores to percolation and replaces the biomat surrounding the trench with a much more active facultative blend that can survive anaerobically in the interior of the trench, while at the same time can pass through to inoculate the surrounding aerobic zone with a much more vigorous bacterial community that is typically found in deep soils around leach trenches.

We request that the Regional Board permit installations of remedial technologies in septic systems in the Los Osos community as an alternative to pumping. Such installations will be sampled and tested to demonstrate the efficacy of these technologies and it is completely inappropriate for the Regional Board to restrict the access of these 50 arbitrarily selected home owners to technologies that have already been proven to be superior to the solution mandated in the CDO and in fact to the proposed centralized sewer.

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